

L3 Lead Examiner Report 1806



June 2018

**Level 3 National in Health and
Social Care Unit 3: Anatomy and
Physiology for Health and Social
Care (31493)**

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Grade Boundaries

What is a grade boundary?

A grade boundary is where we set the level of achievement required to obtain a certain grade for the externally assessed unit. We set grade boundaries for each grade, at Distinction, Merit and Pass.

Setting grade boundaries

When we set grade boundaries, we look at the performance of every learner who took the external assessment. When we can see the full picture of performance, our experts are then able to decide where best to place the grade boundaries – this means that they decide what the lowest possible mark is for a particular grade.

When our experts set the grade boundaries, they make sure that learners receive grades which reflect their ability. Awarding grade boundaries is conducted to ensure learners achieve the grade they deserve to achieve, irrespective of variation in the external assessment.

Variations in external assessments

Each external assessment we set asks different questions and may assess different parts of the unit content outlined in the specification. It would be unfair to learners if we set the same grade boundaries for each assessment, because then it would not take accessibility into account.

Grade boundaries for this, and all other papers, are on the website via this link:

<http://qualifications.pearson.com/en/support/support-topics/results-certification/grade-boundaries.html>

Grade	Unclassified	Level 3			
		N	P	M	D
Boundary Mark	0	8	18	33	48

Introduction

This was the second opportunity for learners to sit this external unit in Anatomy and Physiology for Health and Social Care. The format of the paper followed the format established by the additional sample assessment material published on the Pearson website. The paper consisted of seven questions, each based on an area of the specification. The questions were broken down into sub questions with different weightings from one to eight. The marks allocated reflected the command verb of the question, and therefore the level of detail required from the learner. The extended responses were marked by a levels-based approach to allow learners to be credited for the skills they showed as well as the knowledge recalled.

A high proportion of the learners sitting this unit during the summer session were re-sitting the paper. A lot of the students sitting this paper found the basic recall of biological concepts difficult, and centres are encouraged to use revision techniques that support the learning and recall of basic knowledge. Some learners struggled with interpreting the requirements of questions and would benefit from practicing reading exam questions and understanding how the command verbs and marks available link to the answer required by the question.

Introduction to the Overall Performance of the Unit

Each question starts with recall style questions and builds up to the higher order skills within the context of a body system. A significant proportion of learners struggled with the basic recall questions and lost marks due to a lack of knowledge of the specification content.

The last sub question in each question is about a relevant disorder, and this is where the better learners can demonstrate the links between body systems and other higher order skills. Where learners did not recognize the disorders in the question they struggled to demonstrate those skills and this disadvantaged some of them. Centres are strongly encouraged to ensure that students are familiar with all the disorders identified in the specification.

Individual Questions

Question 1 was based around homeostasis.

Q1ai, was recall from the specification, a reference to 'resting' or similar was required e.g.

1 (a) (i) Define basal metabolic rate. (1) Q01 ai

Basal metabolic rate is your metabolic rate at rest.

Many learners confused Basal Metabolic rate with heart or pulse rate, other learners made comments about digestion.

Q1bii caused a great deal of confusion, the requirement was for some understanding that when your body does not respond to changes in temperature, this can lead to hypothermia as body temperature continues to fall. Very generic responses were seen.

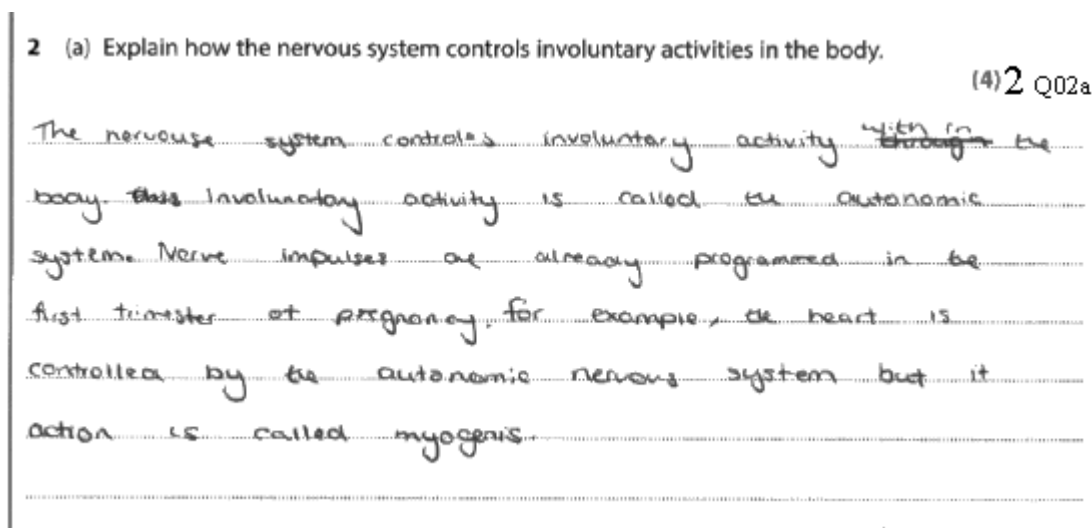
(ii) Describe how the failure of homeostatic mechanisms can lead to hypothermia. (4) Q01b

The body is not getting enough heat so it leads to hypothermia as the homeostatic mechanisms can't keep up.

Question 2 was based around the nervous system.

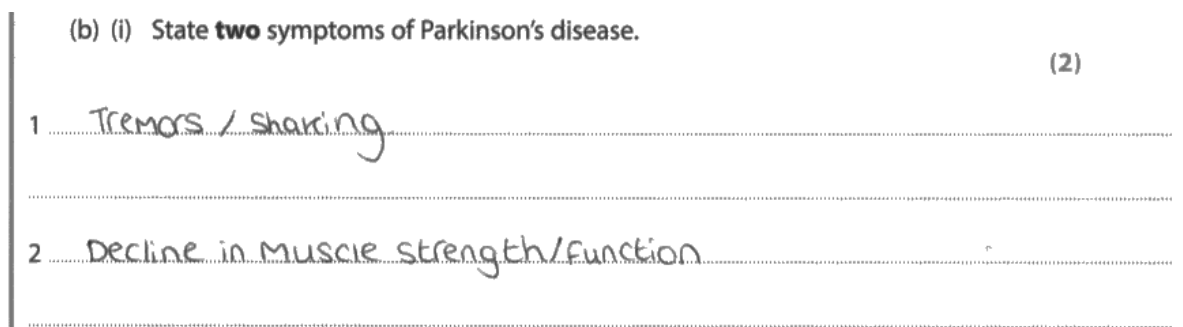
Q2ai, learners did not understand the term 'involuntary' and a lot of answers referred to reflexes with good descriptions of the reflex arc that did not gain any marks as an explanation of the control of e.g. heart rate or digestion was required. Examples were not necessarily required but unconscious control by the autonomic nervous system was. Learners who included accurate examples tended to perform better.

A typical 'better' answer was



One mark for autonomic nervous system and one for heart rate.

Q2bi and ii Learners either knew about Parkinson's disease or they seemed to have never heard of it and made generic guesses about disease in general.



(ii) Explain how Parkinson's disease causes symptoms.

(4)

Parkinson's disease is when the hormone dopamine is not sent to the brain. This causes brain cells to start dying. This will cause the individual to not remember things and it could cause them not being able to move their hands or feet as the brain cell and nerve for that specific thing has deteriorated.

Question 3 was about reproduction.

3a was poorly answered, many learners confused meiosis with mitosis, or did not recognise it as a method of cell division. A lot of learners did not attempt the question. Question 3b was answered better, with this being an example of the answers seen.

(b) Compare foetal development in the first and third trimesters of pregnancy.

(4)

In the first trimester of pregnancy the most foetal development occurs. For example in the first trimester the foetus develops a heart beat, internal organs, bones and facial development. Whereas in the third trimester the foetus continues to grow in size and changes position ready for birth.

Q3c Learners struggle with any question requiring reference to control, a lot of answers described the menstrual cycle, and ovulation without mentioning hormones or control. There was a significant minority of learners very confused about the menstrual cycle, particularly thinking that menstrual bleeding was the release of the egg. Some learners wrote very strange answers demonstrating that they had no knowledge of the menstrual cycle at all. Given the gender makeup of the learners for this qualification this is worrying and centres are encouraged to ensure that this area of the specification is paid close attention to, and the misconceptions discussed with students.

As seen with all the questions about disorders, learners either knew what they were or seemed to have never heard of them, this seemed to follow a centre specific pattern. Where they knew, there were some good answers about endometriosis seen.
e.g.

(d) Explain the symptoms and consequences of endometriosis.

(6)

Endometriosis is when the lining of the uterus wall begins to grow in other places like the fallopian tube and the ovary. The symptoms of endometriosis is irregular periods and bleeding in the lower abdomine. This is because the uterus wall will begin to break down in the fallopian tube ~~in~~ as well as the uterus. The consequences of endometriosis is that the women will suffer a lot of pain in their lower abdomine. Another consequence is that it can cause the women to be infertile ^{or suffer} ~~as the egg~~ more miscarriages. This is because the fertile egg may try to implant in **(Total for Question 3 = 18 marks)**
the fallopian tube instead of the uterus so the foetus will not be able to develop or grow.

Question 4 focused on the endocrine system.

4ai was recall from the glands identified in the specification. A lot of outlines of other glands starting with the letter p were seen.

4bi a lot of answers seen referred to the immune response, learners seem to have misread the question and concentrated on the word response without realising which particular response was required, thus gaining no marks. Other learners confused flight or fight with reflexes and again gained no credit. Those learners who had learnt the response scored well. E.g.

(b) (i) Describe the 'flight or fight' response.

(4)

The flight or fight response occurs when your body is in a stressful situation. The hormone that triggers this response is adrenaline which is produced by the adrenal gland. Adrenaline will ~~excite~~ prepare the body for them to either fight in the situation or to run away from it which is the flight response.

Q4bii A few good answers were seen. Many learners confused the term hypothyroidism with other disorders beginning with h e.g. hypothermia, some gave descriptions of the hypothalamus. Some learners gave good descriptions of hyperthyroidism, a disorder that is not identified in the specifications as one they need to be familiar with. Few learners made the links between the endocrine system and other body systems to gain the highest marks.

Question five was about the respiratory system.

Q5a i was well answered e.g.

5 (a) (i) Outline the role of structures A and B in the diagram.

(4)

A The role of the aveoli is to provide red blood cells with oxygen and to receive carbon dioxide from the ~~red blood cell~~ deoxygenated red blood cell so it can be expired out of the body.

B The role of the blood capillary is to allow the carbon dioxide attached to the deoxygenate red blood cell to diffuse into the aveoli and the oxygen from the alveoli to diffuse into the capillary making red blood cells oxygenated.

Q5aii was answered well by those who recognised the word 'adapted' and responded to it. A lot of learners seemed unfamiliar with the term and gave general comments about the lungs.

Q5b this was either answered well or not at all, depending on the learners' familiarity with the disorder.

e.g.

(b) Explain **two** symptoms of chronic obstructive pulmonary disease.

(4)

1 One symptom is ~~coughing up~~ ^{having a} persistant cough. This is because your airways have become inflamed as less oxygen is used by the lungs.

2 Another symptom is breathlessness because your airways have become blocked by deposits and mucus which means less oxygen can be taken in by the lungs and sent around the body.

5c Many learners could describe the cardiovascular system so gained level 2 marks, but few could link that effectively to the oxygenation of tissues so did not get the highest-level marks e.g.

(c) Discuss how the cardiovascular system enables effective oxygenation of the tissues.

(8)

The cardiovascular system enables effective oxygenation of the tissues. This is because the heart is constantly making sure that deoxygenated blood is sent to the lungs to become oxygenated. When the blood is oxygenated it is sent back to the left side of the heart via the pulmonary vein where it is pumped through the aorta to the rest of the body. The heart enables effective oxygenation of tissues as it is made up of cardiac muscle which makes it strong so it can constantly pump blood around the body to reach vital cells and tissues. Furthermore the cardiovascular system contains arteries and veins. This helps oxygenation of tissues as they can carry blood all around the body which is done by arteries as they have a large lumen. Veins carry deoxygenated blood back to the heart so it is able to become oxygenated again. They contain valves to stop deoxygenated blood going back to tissues which makes sure they are constantly oxygenated.

5d those learners who identified the two processes of respiration accurately tended to gain full marks, many learner's either confused them or seemed unfamiliar with the concepts in the question.

6ai was well answered, learners could extract data from the information given.

6aii was very poorly answered, learners did not recognise that they should apply their prior knowledge of two disorders identified in the specifications to the scenario identified in the question. There was often a recap of the information in the stem seen as an answer. E.g.

(ii) Explain the differences in incidences of COPD and asthma. (4)

The premature mortality from COPD in England was almost twice as high as the European (EU-15) average in 2008. The premature mortality for asthma was over 1.5 times higher.

COPD is the fifth biggest killer disease in the UK and asthma is also responsible for large number of hospital admissions.

6b was generally well answered. Learners could explain the use of statistics to research disorders.

6c This question was answered well by those learners who understood that cystic fibrosis is a recessive disorder, and the implications of that. Many learners could do a Punnett square so picked some marks up but got confused about recessive and dominant alleles so did not explain why both parents had to be carriers.

Summary

The learners generally performed well on this paper. To ensure learners perform to the best of their ability we recommend that they do the following:

- Use the SAMS and additional SAMS to ensure that they understand the nature of the task they are going to have to complete.
- Ensure that they can recall the basic facts about anatomy and physiology as listed on the specification.
- Practice exam style questions, paying particular note to the command verbs and the marks offered to ensure their responses can target the available marks.
- Take care to read the questions in the exam paper, learners missed a lot of marks by misreading questions, in particular the technical language of the subject, e.g. reading hypothyroidism as hyperthyroidism or hypothalamus.
- Ensure they read back through the answers they have written to make sure they make sense and answer the question that has been asked.

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